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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/260,037	03/02/1999	ORON YACOBY-ZEEVI	00/20442	6023

7590
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02/21/2007

EXAMINER

HUTSON, RICHARD G

ART UNIT	PAPER NUMBER
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1652

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/260,037

Applicant(s)

YACOBY-ZEEVI, ORON

Examiner

Richard G. Hutson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 73,74 and 79-89 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 73,74 and 79-89 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/28/2006 has been entered.

Applicant's amendment of claims 73, 79 the cancellation of claims 71, 72 and 75-78 and the addition of new claims 81-89 in the paper of 11/13/2006, is acknowledged. Applicants' arguments filed on 11/13/2006 have been fully considered and are deemed to be persuasive to overcome some of the rejections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. Claims 73, 74 and 79-89 are still at issue and are present for examination.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 73, 74, 79-89 are rejected under 35 USC 101 as encompassing non-statutory subject matter. The claimed invention is drawn to biological preparations that

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include cells and tissues. Reference to the specification, paragraph bridging pages 30 and 31 indicate that the claimed cells may encompass embryos. Claims 82 and 87 include the specific recitation that the claimed invention includes blastocysts and embryos, respectively. None of the claims exclude human embryos or blastocysts. A reasonable interpretation of the scope of the claims to embryos and blastocysts is that they encompass human beings which are considered to be non-statutory subject matter. Exclusion of such embryos, blastocysts, and other cells which could reasonably read on human beings would be remedial. It is noted that a similar rejection was made in the office action dated 12/2/2002.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 73, 74, 79, 81, 88, are rejected under 35 U.S.C. 102(e) as being anticipated by Pecker et al. (U.S. Patent No. 5,968,822).

This rejection was stated previously as it applied to previous claims 73, 74, 76, 79. In response to this rejection, applicants have amended claims 73 and 79 and cancelled claim 76 and added new claims 81-89 and traverse the rejection as it applies

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to the newly amended claims. Claim 88 is included in this rejection for the reasons previously stated for claim 73.

Applicants traverse this rejection on the basis that the previous action argues that "an inherent property of the insect cultures expressing... heparanase...is that the excreted heparanase would externally adhere to said cells." Applicants submit that this is not inherent, on the basis that cells require heparin sulfate on their surface in order for heparanase to externally adhere to them. Applicants also reference the declaration under 37 U.S.C. 1.131, submitted by Iris Pecker on 7/28/2006.

Applicants further traverse the rejection on the basis that claims 73, 74 and 79 require that heparanase be added to a cell preparation, while the 822 patent does not teach or suggest this feature.

Applicant's complete argument is acknowledged and has been carefully considered, however, is not found persuasive on the following basis.

First, applicants arguments that claims 73 and 74 require that heparanase be added to a cell preparation are not found persuasive on the basis that the heparanase expressed by High Five or Sf21 cells with pFhpa virus is considered to be "added to said preparation" by the addition of the genetic material encoding said heparanase and its expression. Further even if applicants were to successfully argue that this heparanase was not added, it would remain that the preparation taught by Pecker et al. would not be any different from the claimed preparation comprising an externally added heparanase.

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With respect to applicants argument that it is not an inherent property of the taught preparation of High Five or Sf21 cells expressing mammalian heparanase, that the cells comprise mammalian heparanase externally adhered to said cells, is not found persuasive based on the following. Applicant's reference to applicant's specification and the declaration of Iris Pecker regarding the experiments with CHO 745 cells are acknowledged. Applicants submit that cells require heparin sulfate on their surface in order for heparanase to externally adhere to them, based on applicants statements that CHO745 cells, for example have not shown external adherence for this reason. Applicants statements are acknowledged, however, not supported by applicants own specification which refers to the experiments of Figure 3; and states that "It was found that the adherence of heparanase to the GAG-less cells was significantly decreased (Figure 3). (page 49, lines 13-14). Applicants attention is further directed to applicants results presented in Figure 3, which show that all of the CHO cells tested (CHO-dhfr, Cho-803 and CHO-745) had Heparanase activity externally adhered to the cells, although the level may be dependent upon the presence of certain molecules. This different amount of externally adhered heparanase to different cell types is not considered relevant because even the lowest level of externally adhered heparanase is still some externally adhered heparanase and is still sufficient to anticipate the rejected claims. It is further noted that applicant's specification describes a number of additional cell types to which applicants "added " heparanase externally adheres , at least at some level.

Thus Pecker et al. continues to anticipate claims 73, 74, 79.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 73, 74, 79, 80, 81, 83, 88, 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pecker et al. (U.S. Patent No. 5,968,822) and Weinshank et al. (U.S. Patent No. 5,360,735).

This rejection was stated previously as it applied to previous claims 73, 74, 76, 77, 79, 80. In response to this rejection, applicants have amended claims 73 and 79 and cancelled claim 76 and added new claims 81-89 and traverse the rejection as it applies to the newly amended claims.

Applicants traverse this rejection on the following basis. Applicants first submit that as argued above, secreted heparanase would not inherently externally adhere to cells. As discussed above this argument is not found persuasive for the reasons discussed above.

Second, applicants submit that each of the claims 73, 74, and 79 require that the heparanase be added to the cells, in contrast to the above patents. As discussed above it the taught means of adding a nucleic acid encoding a heparanase to a cell is encompassed by "adding heparanase to the cells".

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Finally applicants submit that expressing mammalian heparanase as taught by the '822 patent in the mammalian cell line taught by the '735 patent, so as to have "cells in suspension and a purified mammalian heparanase enzyme being externally adhered to said cells, thereby increasing the natural amount of heparanase externally adhered to said cells," as required by the claims, at the time of the subject invention, was at best an invitation to try and not obvious to accomplish.

Applicants submit that in most genetically modified mammalian cells which express heparanase, recombinant heparanase can not be detected in the culture medium, but rather inside the cells. While the '822 patent teaches heparanase secretion in insect cells, secretion of heparanase from mammalian cells was obtained only when the signal peptide of heparanase was replaced by a secretion signal peptide. This replacement is not taught or suggested by the '822 or '735 patents. See Declaration of Iris Pecker, paragraph 5.

In response to applicants above argument, one of skill in the art would recognize that in order to express the heparanase of Pecker et al. external to the cell, a signal peptide would need to be attached to the encoded polypeptide so as to direct it to the exterior of the cell for ease of isolation. Such directed expression is routine in the art as was recognized by Pecker et al. in their identification of a signal peptide on the encoded heparanase.

Applicant's argument that detecting the heparanase in mammalian cells is difficult because most cell lines have a basal heparanase expression. at the time of the subject invention, is acknowledged, however, considered irrelevant to the claims, as the

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claims are directed to a biological preparation comprising cells having a mammalian heparanase externally adhered to said cells. The claims are not direct to a method and thus the relevancy of this argument is questioned.

Thus claims 73, 74, 79, 80 remain obvious over Pecker et al. (U.S. Patent No. 5,968,822) and Weinshank et al. (U.S. Patent No. 5,360,735) for the reasons of record and for those repeated above.

Remarks

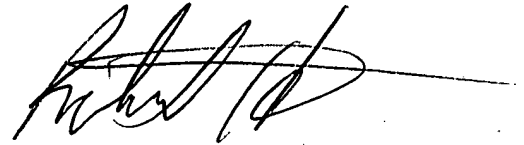
No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard G Hutson whose telephone number is (571) 272-0930. The examiner can normally be reached on 7:30 am to 4:00 pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on (571) 272-0928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Richard G. Hutson', with a long horizontal line extending to the right.

Richard G Hutson, Ph.D.
Primary Examiner
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rg
2/8/2007